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Trolamine

$C_6H_{15}NO_3$ 149.19
Ethanol, 2,2',2''-nitrilotris-;
2,2',2''-Nitrilotriethanol CAS RN®: 102-71-6.

DEFINITION

Trolamine is a mixture of alkanolamines consisting largely of triethanolamine $[N(C_2H_4OH)_3]$ containing some diethanolamine $[NH(C_2H_4OH)_2]$ and monoethanolamine $[NH_2(C_2H_4OH)]$. It contains NLT 99.0% and NMT 107.4% of alkanolamines, calculated on the anhydrous basis as $N(C_2H_4OH)_3$.

IDENTIFICATION

Change to read:

- **A.** [▲ SPECTROSCOPIC IDENTIFICATION TESTS \(197\)](#), [Infrared Spectroscopy: 197F](#) ▲ (CN 1-MAY-2020)
- **B.**
Analysis 1: To 1 mL add 0.1 mL of cupric sulfate TS.
Acceptance criteria 1: A deep blue color is produced.
Analysis 2: Add 5 mL of 1 N sodium hydroxide, and concentrate to one-third of the original volume by boiling.
Acceptance criteria 2: The blue color remains.
- **C.**
Analysis: To 1 mL add 0.3 mL of cobaltous chloride TS.
Acceptance criteria: A carmine red color is produced.

ASSAY

- **PROCEDURE**
Sample: 2 g of Trolamine
Analysis: Transfer the *Sample* to a 300-mL conical flask. Add 75 mL of water and 2 drops of methyl red TS, and titrate with 1 N hydrochloric acid VS. Each mL of 1 N hydrochloric acid is equivalent to 149.2 mg of triethanolamine, expressed as $N(C_2H_4OH)_3$.
Acceptance criteria: 99.0%–107.4% on the anhydrous basis

IMPURITIES

- [RESIDUE ON IGNITION \(281\)](#): NMT 0.05%

SPECIFIC TESTS

- [SPECIFIC GRAVITY \(841\)](#): 1.120–1.128
- [REFRACTIVE INDEX \(831\)](#): 1.481–1.486 at 20°
- [WATER DETERMINATION, Method I \(921\)](#): NMT 0.5%, using a mixture of glacial acetic acid and methanol (1:4) as the solvent

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Preserve in tight, light-resistant containers.
- [USP REFERENCE STANDARDS \(11\)](#)
[USP Trolamine RS](#)

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
TROLAMINE	Documentary Standards Support	SE2020 Simple Excipients
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	SE2020 Simple Excipients

Chromatographic Database Information: [Chromatographic Database](#)

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